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Review on Frontline Demonstration of KVK and its effect on Yield, Economics, Income and Management Practices of Different Crops in India

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ABSTRACT: Field demonstration is the elderly concept of Front-Line Demonstration. FL Devolved by the Indian Council of Agriculture Research with the beginning of the Technology operation on Oilseed Crops during mid-eighties. Field demonstrations carry out close regulation of scientists of National Agriculture Research System recognized as frontline demonstrations because technologies are demonstrated in front of farmer by the scientists before being fed into the major extension method of the State Department of Agriculture. Adoption level of the beneficiaries were medium to high even as non-beneficiaries were found small level of adoption are enhanced production practice of mustard crop, proper training and extension strategies to be followed maximum adoption of mustard crop in the research area. Major limitations are to improve the spread of area explicit and maintainability upgrading advancements. Decentralize specialized and dynamic power to the locale level. Make a more compelling and monetarily maintainable public expansion framework. Step up the privatization of certain innovation move exercises. This article is helpful in extension work for improving the yield, economics and income of the farmer with different ideas and methods discussed.

Keyword: Frontline Demonstration, KVK, Yield, economics, growth, management practices and India.

INTRODUCTION

The Krishi Vigyan Kendras were assigned different actions pertaining to evaluation, modification and expression of different novel technologies. This includes conduction of association of Frontline demonstration, estimation, training programmes and sophistication of different agriculture and related technologies during OFT. Extension activities and movement of Krishi Vigyan Kendras do significant movement for the farmers and useful in hole crop period. Krishi Vigyan Kendras are the base of all organizations who work for purpose of technology through refinement, evaluation and demonstration of confirmed technology under diverse "micro farming" situation in a region (Das, 2007). In the year 1991-92 Indian Government established a "Technology Mission on Pulses" to improve the pulse production and productivity through frontline demonstration. The mandate of the Krishi Vigyan Kendra (KVKs) are application of technology through refinement, demonstration and assessment of verified technologies under different "micro farming" situations in a region (Das, 2007).

Frontline demonstrations is show recently released crop protection and production technology and its running practice on the farmers field under diverse farming situation and agro-climatic regions. While demonstrating the technologies on farmer's field, the scientist are compulsory to study situation, factors and elements involving in higher crop production, Limitation of production and thereby create production data and feedback information. Frontline demonstrations were conduct in two adopted villages at pasture of 20 farmers within area of 0.4 hectare each. Moong crop was grown according to the package and practices of moong crop according field demonstration (Anonymous, 2017).

A. Additional activities to be conducted by KVKs

1. Field day
2. Kisan Mela

3. Kisan Gosthi
4. TV/Radio talk
5. Film Show
6. Farmers visit to KVKs
7. Diagnostic and Exposure Visits
8. Trainee and Ex-trainee meet
9. Commemoration of important day
10. Animal Health Camp
11. Trade fair
12. Kisan Mobile Sandesh
13. TV and live Show
14. Soil Tests
15. Extension writing.

B. Publication and coverage

Various publications and written material played significant role for suggestion of elected technology and mass communication. In this relationship, the KVKs are aggressively and repeatedly publishing a variety of literatures for the advantage of farmers as given away in the following records.

1. KVK News lettering
2. Research and review Papers
3. Extension /Technical statement
4. folders /Leaflets
5. Popular (Hindi and English) articles
6. News paper reporting.

C. Horizontal spread of technologies

Adaption and spread of every technology through a huge mass of farming society is mostly depends on the uniqueness of technology as well as its broadcasting method. Function of KVKs was recognized and organizes the crucial serious inputs for the region and established for its wider reporting. In this relationship about 2.66 lakh hectare regions were occupied with different technology being whole KVKs system in the state. This will contributed about 4.31% to the gross cropped area of the state

1. High Yielding Varieties of Cereal, Pulses and Oilseeds crops
2. Crop Protection in different crops
3. INM in different crops
4. SRI technique of rice farming
5. Line and row sowing of paddy
6. Hybrid rice promotion
7. Others (sweet potato, agricultural implements, chilli etc)

D. Major Steps in Conducting field demonstrations

1. Planning Phase:

A. Know the Vicinity:

a) Visiting village and meet farmers.
b) Collect information using PRA tools.
c) Get-together with people in groups and individually.
d) Get-together with opinion leaders.
e) Swapping information with basic extension workers
f) Maintaining office account of farmers and essential agriculture.

B. Choose Technologies
C. Choose Demonstration Site
D. Choose Demonstration Farmers
E. Finalise Package of Practices
F. Prepare for demonstration

2. Conducting Phase

A. Layout of Demonstration
B. Crucial Farm Operations
C. Field Day
D. Harvesting

3. Follow-up Phase

4. Record Keeping

A. Information Card
B. Technical Report

Mustard. Singh *et al.*, (2018) evaluated 110 respondents' farmers together the group for compilation of information. The information was collect through a well-structured and pre- tested meeting schedule. Mass of the recipient respondents were found to have average level of adoption whereas non-beneficiaries were found little level of adoption of enhanced production practices of Mustard.

Green Gram. Chouhan *et al.*, (2013) selected 120 farmers as respondent for the research purpose. Out of entire beneficiary, (45.00 %) had average adoption level, followed by (33.33 %) had high and merely (21.67 %) had small adoption level of green gram production knowledge. Jatav (2010) reported that mass of Frontline Demonstration respondents 53.33 per cent had average level of technical nature, while (44.44 %) had high and merely (2.22%) had little level of scientific nature. Kumari (2015) observed that mass of the Frontline Demonstration beneficiaries 58.00 per cent were having high implementation of wheat production technology. Whereas mass of non-frontline demonstration beneficiaries 50.00 per cent were having average adoption of wheat production technology. Singh (2017) reported that adoption of better package of practices in wheat growing reported superior B:C ratio (1.92) as compared to FP (1.63). Yield improvement and superior net returns recorded under Frontline demonstration of better technologies in wheat. therefore, the productivity of wheat might be improved with the adoption of suggested better package of practices. Matharu and Tanwar (2018) reported the moong variety SML 668 gave the maximum yield 11.08 q/ha and 11.15 q/ha as compare to the farmers cultivated variety which gave 9.80 q/ha and 9.75 q/ha yield in the year 2016 and 2017. The signify technology index, technology gap and extension gap were found 1.20 q/ha, 0.14 q/ha and 1.34 %, respectively. Suggested technologies give maximum mean net return of Rs. 35365 per hectare with a cost benefit ratio 3.25

as compare to farmers practice with average net return of Rs. 29205 per hectare with a benefit cost ratio 2.86.

Chickpea. Kangali (2012) reported that in case of adopter of frontline demonstration of chickpea cultivar, majority of the farmers 50.00 per cent obsessed limited adoption of total chickpea cultivation technology considered in the study followed by 40.00 per cent chickpea grower had complete adoption and10.00 per cent farmers had little adoption of chickpea cultivation technology.

Tomato. Misra *et al.*, (2019) reported that maximum yield in demonstration was recorded 605.80 q/ha was obtained in demonstrated plot over control 505.30 q/ha with an extra yield of 100.50 q/ha and the rising the common tomato productivity by (19.88 %). The technology gap and extension gap ranged between 44.20 to 69.60 and 101.10 to 113.0 q/ha, respectively, with the technology index of (9.40 %) throughout the demonstration years. Moreover this, the demonstrated plots gave maximum net return, gross return with higher cost benefit ratio when compared to farmers practice. In present study efforts were also made to study the impact of Frontline demonstration on horizontal spread which was amplified 209.52 per cent, if suitable package and practices are adopted. The average yield of tomato is amplified by (20.51 %). The yield of tomato might be improved over the yield gained under farmers practices (less knowledge on utilize of bio fertilizers, no idea for balanced dose of fertilizer, Not proper knowledge of IPM, IDM and INM practices) of tomato cultivation. The above results are in parallel with the conclusion of Balaji *et al*., (2013) and Singh *et al.,* (2011). Likewise yield improvement in different crops in frontline demonstration were recognized by Mishra *et al.* (2009), Hiremath *et al.*, (2007), Dhaka *et al.,* (2010), Surywanshi and Prakash (2015), Misra *et al.* (2014). Kumar *et al.,* (2010) and Desai *et al.*, (2016) reported that the beneficial difference in tomato yield before and after conduct of frontline demonstration programme, amplified the yield of tomato per hectare by (29.18 %) in demonstrated plots over farmers practice. Netreturn and C:B ratio were found to increase in demonstrated field as compared to farmers cultivated. The adoption of different package and practices still though after frontline demonstration programme, which shows optimistic impact of frontline demonstration on adoption of demonstrated production technology. The farmers sell tomato at farmer plot was Rs. 600 per quintal and on that base profitability was estimated (Samui *et al.,* 2000 and Balaji *et al.,* 2013). Which shows that net benefit from tomato before frontline demonstration was Rs. 1,44,620/ha, while the net benefit from tomato after frontline demonstration was Rs. 2,20,480/ha. The C:B ratio for before frontline demonstration was 2.37, which was amplified to 3.15 after frontline demonstration. It is observed from the results that C:B ratio of tomato frontline demonstration is higher than before frontline demonstration. This could be due to maximum adoption of all the package and practices suggested for tomato crop cultivation in the area (Yadav *et al.,* 2004). However, increased in B:C ratio after FLD plot was due to adoption from 30.00 per cent to 80.00 per cent adoption of different package of practices even after FLD programme. This might be due to good extension contact by FLD farmers with the scientist and extension workers. Similar results were reported by Shinde (2011) and Sharma *et al.* (2004).

Paddy. Singh *et al.*, (2018). recorded that the average yield of 42.17 q/ha was recorded in frontline demonstration and in farmer practices it was just 26.46q/ha. Thus, the average technology gap, extension gap, and technology index of 5.96, 15.71 and 11.77 percent respectively were obtained between demonstration and farmer practices. The average yield of paddy increased 54.28 percent over farmers' practices, while the year wise variation in yield was increases 37.84 to 54.28 percent. The cultivation of paddy under improved technologies gave higher net return of Rs 36304, 18340 and Rs. 26400 per ha respectively as compared to farmers practices. Similar findings were reporting by Kiran *et al.,* (2016). The benefit cast ratio of paddy cultivation under improved cultivation practices were 2.5, 2.29 and 1.72 as compared to 1.5, 1.3 and 1.62 under farmers practices. This may be due to higher yield obtained under improved technology compared to local check (farmers practices) this finding is in corroboration with the findings of Mokidue *et al.,* (2011), Therefore, for enhancing the production and productivity of paddy crop, strategy should be made for getting the more and more recommended technologies adopted by the farmers (Raj *et al.,* 2013 and Sharma *et al.,* 2011).

E. Insect-pest incidence

In front line demonstration plots significantly higher mean population reduction (73.72 and 72.92%) was observed as compared to farmer practices (64.55 and 64.97%) during the period of study. The less pod damage per plant after the application of recommended insecticide also reported earlier by Yadav *et al*., (2007) and Roy *et al*., (2006). Tiwari *et al.*, (2015) conducted during the *rabi* season at 12 farmers fields to demonstrate production potential and economic benefit of improved technologies consisting suitable variety (GW-273), integrated nutrient management (100: 60: 40: 25 kg NPKS/ha+ *Azotobacter* + PSB @ 5g/kg of seed), integrated pest management (deep ploughing + seed treatment with *Trichoderma viridae* @ 5 g/kg seed) at Umaria district of Madhya Pradesh under irrigated conditions during *Rabi* season of 2008-09 and 2009-10. The improved technologies recorded mean yield of 35.16q/ha, which was 47 percent higher than

that obtained with farmers practice of 24.01q/ha. Improved technologies gave higher mean net return of Rs. 24082/ha with a benefit cost ratio 2.32 as compared to farmers practice (Rs. 13966/ha, benefit cost ratio 1.93).

CONCLUSION

The farmer were convince for adopting the precise technologies like improve variety, seed treatment, seed inoculation with rhizobium biofertilizers, pre-emergence weed management and plant protection measures were undertaken in a proper way. Front line demonstration also helped in replacement of local unrecommended practices with improved recommended practices. Favorable benefit cost ratio is self explanatory of economic viability of the demonstration and convinced the farmers for adoption of improved technology of wheat production. The technology suitable for enhancing the productivity of wheat and calls for conduct of such demonstration under the transfer of technology programme by KVKs.

FUTURE THRUST

Creation of value seed, seedling and diverse bio-specialists, sources of info and administrations to improve innovation reception. Spread innovations in the areas by giving preparation to the expansion laborers of the different line offices. Do On-ranch Testing to tweak the advances dependent on cultivating circumstances and foster area explicit innovation. Lead Frontline Demonstration. Grant expertise of ranchers and provincial young people through professional preparation. Arrange the need-based preparing programs for topic subject matter experts and ranchers, after distinguishing proof of problems. Prepare specialized authority in the towns by bestowing wanted preparing. Exploit their greatest potential in a given cultivating framework

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